From: "Novak, Madi" <Novak.Elisabeth@epa.gov>
To: "Eron Dodak" <edodak@integral-corp.com>
CC: "Michael PINTO" <michael.pinto@total.com>
petersonle@cdm.com
Date: 4/16/2021 4:42:20 PM
Subject: RE: Arkema GW Monitoring - Groundwater Filters and Detection Limits

Thank you for your responses Eron,

I understand the purpose of the pilot study and will look forward to discussing the results and how we can use the information going forward. I'd like to confirm that you'll continue to obtain filtered sample results until the outcome of the study can be evaluated by EPA, correct?

Have a good weekend,
Madi

From: Eron Dodak <edodak@integral-corp.com>
Sent: Thursday, April 15, 2021 1:10 PM
To: Novak, Madi <Novak.Elisabeth@epa.gov>
Cc: Michael PINTO <michael.pinto@total.com>; petersonle@cdm.com
Subject: RE: Arkema GW Monitoring - Groundwater Filters and Detection Limits

Hi Madi,

Below are our responses to your comments in red font. Please let us know if you have any questions. Thanks!

ERON DODAK
Tel: 503.943.3614 | Cell: (b) (6)
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From: Novak, Madi <Novak.Elisabeth@epa.gov>
Sent: Wednesday, April 7, 2021 5:04 PM
To: Eron Dodak <edodak@integral-corp.com>
Cc: Michael PINTO <michael.pinto@total.com>; Peterson, Lance <petersonle@cdmsmith.com>; Novak, Madi <Novak.Elisabeth@epa.gov>
Subject: RE: Arkema GW Monitoring - Groundwater Filters and Detection Limits

Thank you Eron and Mike,

I understand that many of the groundwater analyses are underway or complete. However, EPA provides the following comments to be addressed to the extent possible and for future use.

Regarding the filtering plan:
The proposal for groundwater samples to be filtered in the lab with a 0.45 micron glass fiber filter for organic COC analysis and field filtration with polyethersulfone (PES) filters is acceptable. It is unclear if the pilot study being described is looking at effects of settling vs. using a coarse glass fiber filter in the field in lieu of filtering in the lab using a 0.45 micron filter or as a preliminary step before sending to the lab for filtration and analysis. In order to get truly dissolved concentrations a 0.45 micron filter should be used for filtration and doing so in the lab is acceptable.
Comment noted. The purpose of the pilot study is to assess the difference in turbidity and DDx concentrations between filtering with a 0.45 micron glass fiber filter and unfiltered samples that are left undisturbed for 24-48 hours in the

laboratory so the particulates are allowed to settle out of the groundwater. If the turbidity is low (e.g., <5 NTU) in the unfiltered samples and the DDx concentrations in the filtered and unfiltered samples are similar (e.g., within 10-15%), future samples could be allowed to settle in the laboratory instead of being filtered.

Regarding the MDLs/LOQs plan:

- QAPP Table B-5: For soil and sediment samples the MDLs for dioxin/furan and dieldrin analysis are below project action limits (PALs) and LOQs are above PALs. Similarly for porewater samples the MDL for tetrachloroethene is below PALs but the LOQs are higher than PALs. The proposed methods and laboratories for these analyses are acceptable and the difficulty in getting LOQs below PALs for these analytes is acknowledged. LSS appreciates EPA's flexibility on this issue.
- QAPP Table B-6 (groundwater samples):
  - DDx – LSS indicates that: "Test America West Sacramento can run Method 1699 and get the MDLs below the PALs, but the LOQs are still above the PALs." Method 1699 should be used to get MDLs below PALs. If the Test America West Sacramento laboratory has NELAC accreditation then it may still be used. The laboratory is NELAC accredited, so LSS will use Method 1699 for aqueous samples.
  - Arsenic and cadmium – Methods capable of getting MDLs below PALs should be used to the extent possible; other parties have used 6020B low level analysis. Arsenic and Cadmium can be subbed to Brooks Applied Laboratories. MDLs of 0.009 ug/L and 0.004 ug/L, respectively, meet the Table 17 requirements.
  - Pentachlorophenol – An alternate method capable of getting MDL below PAL should be used, such as 8041A. PCP can be subbed to ARI. Their reporting limit of 0.025 ug/L by Method 8041 meets the Table 17 requirement.
  - TPH-Diesel Range Organics – LSS states that no methods capable of reaching the PAL were identified. EPA acknowledges this concern and the LSS recommendation of no change to this analysis is acceptable. LSS appreciates EPA's flexibility on this issue.
  - Cyanide – The proposed change to Method 4500 CN E LL at Test America CalScience is acceptable. LSS will use Method 4500 CN E LL for future aqueous samples.
  - 2,3,7,8-TCDD, lead, and tetrachloroethene – The methods and laboratories proposed in QAPP Table B-6 are acceptable. LSS appreciates EPA's flexibility on this issue.
- EPA notes that three chlordanes (cis-nonachlor, trans-nonachlor, and oxychlodane) are missing from QAPP Tables B-5 and B-6 but are included in QAPP Attachment 2 in the 8081A Method Detection Limits table. LSS should confirm that the five chlordanes needed for the total chlordanes sums will be analyzed by the proposed Method 8081B. See Section 6.2.5 of the Program Data Management Plan for details. See link to the Portland Harbor environmental data portal: http://ph-public-data.com/document/PHIDB2020/ LSS notes that there is a ROD Table 17 errata #2 CUL for riverbank soil/sediment (1.4 ug/kg), but there is no CUL for groundwater. ETA Seattle will report additional chlordanes (cis-nonachlor, trans-nonachlor, and oxychlordane) with method 8081A.

Please don't hesitate to reach out with any questions.

Thank you,
Madi

Madi Novak, Remedial Project Manager
EPA Region 10, Superfund & Emergency Management Division
Oregon Operations Office
503-326-3277 (O)
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She/Her/Hers

Everything should be made as simple as possible, but no simpler. – Einstein

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From: Eron Dodak <edodak@integral-corp.com>
Sent: Thursday, April 1, 2021 12:28 PM
To: Novak, Madi <Novak.Elisabeth@epa.gov>

Cc: Michael PINTO <michael.pinto@total.com>
Subject: Arkema GW Monitoring - Groundwater Filters and Detection Limits

Hi Madi,

We have developed the following plan to gather more potentially useful data from turbid sampling locations and to address MDL and LOQ requirements.

We researched the use of groundwater filters for samples with hydrophobic organics. Groundwater filters are very rarely used to filter samples for hydrophobic organics. The best option is a glass fiber filter since it is unlikely to cause any significant adsorption. Unfortunately the only glass fiber filters that we have found for use in the field are relatively coarse pre-filters. However, Test America can filter the samples using a 0.45 micron glass fiber filter.

The following will be done for turbid samples:

- Send the samples for organic COCs (pesticides, herbicides, dioxins/furans, PCBs, SVOCs/PAHs) to the lab without field filtration. The lab will filter one set of bottles. The filtered and unfiltered samples will be analyzed for organic COCs.
- The metal samples that are slated for dissolved analyses can be field filtered as we have been doing with a polysulfone in-line filter since metals are not hydrophobic.

The turbidity issue is likely to come up again when we sample the riverbank piezometers and collect porewater samples. We are conducting a small pilot study to quantify the effects of glass filter filtration versus simply allowing the sediment to settle out of the sample bottles. This is being done on a subset of groundwater samples that are only analyzed for DDx since the other hydrophobic organics will have similar adsorption properties. The data from this comparative analysis will be used to determine whether sample filtration is effective and/or whether natural settling of solids in the water samples could be equally effective at producing non-turbid samples with equivalent results.

Finally, we have assessed the feasibility of lowering MDLs and LOQs to the Project Action Limits (PALs) for groundwater. Here are our recommendations:

- DDx – No changes recommended. Test America West Sacramento can run Method 1699 and get the MDLs below the PALs, but the LOQs are still above the PALs. In addition, this lab is not certified in Oregon for this particular test method.
- Metals (As and Cd) – No changes recommended. Battelle could get the LOQs below the PALs, but would require special methods. These are not metals present at the site, so the change in analytical method is not recommended.
- PAHs and 2,3,7,8-TCDD – No changes recommended. Axys could get LOQs below PALs, but it would require high volume sampling (e.g., 100 liters). This is not practical for groundwater sampling.
- TPH-D – No changes recommended. No methods were identified that could reach the PAL (0.0026 mg/L).
- Cyanide – Change to Method 4500 CN E LL at Test America CalScience. The MDL and LOQ are both below the PAL using this method.

Please let me know if you have any questions or if you would like me to set up a short Teams meeting to discuss. Thanks!

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